

In the Claims:

1-3) (Cancelled)

4) (Currently Amended) The transmitter method of claim 181, wherein said ~~step of modulating is effected according to a~~ modulation scheme includes at least one mode selected from the group consisting of BPSK, QPSK, AM, FM, CDMA.

5) (Currently Amended) The transmitter method of claim 181, wherein said ~~step of modifying is effected according to a~~ modification scheme includes at least one change selected from the group consisting of shifting a phase, shifting an amplitude, and shifting a frequency.

6) (Currently Amended) The transmitter method of claim 181, wherein the signal is used to communicate at least one message selected from the group consisting of an intention to transmit, an end of transmission, a congestion condition, an instruction to turn on a device, an instruction to turn off a device, a request to retransmit and dominant and recessive statuses.

7) (Currently Amended) The transmitter method of claim 181, wherein the ~~said carrier~~ is conveyed by at least one medium selected from the group consisting of a utility power line, a DC power line, a dedicated communication wire, a fiber optic cable, a radio wave, an ultra sonic wave and a magnetic field.

8) (Currently Amended) The transmitter method of claim 181, wherein said modulating and said modifying are effected substantially simultaneously.

9) (Currently Amended) The transmitter method of claim 181, wherein ~~said further comprising the step (c) — altering said~~ modification scheme is altered to adjust the probability of signaling errors.

10) (Currently Amended) A receiver for receiving an arbitrary datum from a channel of a communication carrier and for receiving a signal over the channel comprising:

- (a) a modem for demodulating the arbitrary datum, the datum having been modulated by a modulation scheme; and
- (b) a detector to detect the signal, the signal having been sent via modifications of the carrier according to a modification scheme;

wherein said modification scheme includes a pattern of modifications to the carrier;

wherein the receiver further comprises:

- (c) a processor for identifying said pattern;

and wherein said modulation scheme includes modulating a symbol onto the carrier over a symbol period and said pattern includes a plurality of said modifications within said symbol period.

11-12) (Cancelled)

13) (Currently Amended) The receiver of claim ~~11~~10, wherein said processor includes at least one circuit selected from the group consisting of a programmable logic array device, an application specific integrated circuit, and a digital signal processor.

14) (Cancelled)

15) (Currently Amended) The receiver of claim ~~11~~10, wherein said processor further evaluates communication performance.

16) (Original) The receiver of claim 10, wherein a pattern identification criterion is adjusted according to communication performance.

17) (Original) The receiver of claim 10, wherein said processor further adjusts a usage of a channel for an arbitrary datum transmission according to communication performance.

18) (Currently Amended) A transmitter for transmitting an arbitrary datum over a channel of a communication carrier and for sending a signal over the channel comprising:

- (a) a modem for modulating the arbitrary datum according to a modulation scheme; and
- (b) a signaling shifter to modify the communication carrier according to a modification scheme;

wherein said modification scheme further includes a pattern of modifications, and

wherein the transmitter further comprises:

- (c) a signaling pattern generator for controlling said shifter;

and wherein said modulation scheme includes modulating a symbol onto the carrier over a symbol period and said signaling pattern includes a plurality of said modifications within said symbol period.

19-22) (cancelled)

23) (Currently Amended) The transmitter of claim ~~19~~18, wherein said signaling pattern generator includes at least one processor selected from the group consisting of a programmable logic array device, an application specific integrated circuit, and a digital signal processor.

24) (Currently Amended) The transmitter of claim ~~19~~18, wherein said pattern is altered to adjust the usage of a channel according to communication performance.

25) (Currently Amended) A method of signaling during communication by a plurality of devices over a plurality of channels, comprising the steps of:

- (a) sending a first signal from a first device of the plurality of devices on a first channel of the plurality of channels, by steps including:
 - (i) modulating a carrier of said first channel by a modulation scheme for transmitting an arbitrary datum, and
 - (ii) modifying said carrier by a modification scheme for sending said first signal; and
- (b) listening by a second device for said signal over a subset of the plurality of channels, said subset containing said first channel and at least one other channel,

wherein said second device includes a transmitter and said listening is for the sake of collision detection;

and wherein the method further comprises the steps of:

(c) resolving said collision; and

(d) assigning a signal priority level to said first signal;

and wherein said resolving is according to said signal priority level.

26) (Currently Amended) The method of claim 25, further comprising the step:

~~(e)~~(e) detecting by said first device of a second signal over said at least one other channel.

27) (Cancelled)

28) (Currently Amended) The method of claim ~~27~~25 wherein said first signal is of an intention to transmit over said at least one channel.

29-30) (cancelled)

31) (Currently Amended) The method of claim ~~30~~25, wherein a channel of said subset is associated with a channel priority level and said step of assigning said signal priority level is according to said channel priority level of said channel.

32) (Cancelled)

33) (Original) A system for testing communication amongst a plurality of devices over a medium comprising:

(a) an adjuster to change an attribute of the medium; and

(b) a DC power supply for supplying a DC voltage to the devices, the DC power supply being decoupled from transmissions by the devices.

34) (Original) The system of claim 33, wherein said adjuster changes at least one attribute selected from the group containing attenuation, impedance, frequency response, noise pattern, and noise level.

35-36) (cancelled)

37) (Original) A system for communicating via a medium, comprising:

- (a) a plurality of devices for communicating via the medium, each said device including a transmitter for transmitting an arbitrary datum over a channel of a communication carrier via the medium and for sending a signal over the channel, each said transmitter including:
 - (i) a modem for modulating the arbitrary datum according to a modulation scheme, and
 - (ii) a signaling shifter to modify the medium according to a modification scheme; and
- (b) a testing subsystem for testing the communicating by said plurality of devices, said testing subsystem including:
 - (i) an adjuster to change an attribute of the medium, and
 - (ii) a DC power supply for supplying a DC voltage to the devices, the DC power supply being decoupled from transmissions by the devices.

38) (Cancelled)

39) (New) A method of signaling during communication by a plurality of devices over a channel, comprising the steps of:

- (a) sending a first signal from a first device of the plurality of devices on the channel, by steps including:

- (i) modulating a carrier of the channel by a modulation scheme for transmitting an arbitrary datum, and
- (ii) modifying the carrier by a modification scheme for sending said first signal; and
- (b) listening by a second device for said signal on the channel for the sake of collision detection, said second device including a transmitter;
- (c) resolving said collision; and
- (d) assigning a signal priority level to said first signal; said resolving being according to said signal priority level.